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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/746,601

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James S. McCormick

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EXAMINER

SCHEIBEL, ROBERT C

ART UNIT

PAPER NUMBER

2666

DATE MAILED: 01/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/746,601	Applicant(s) MCCORMICK ET AL.	
	Examiner Robert C. Scheibel	Art Unit 2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17, 19 and 21 is/are rejected.
- 7) ☒ Claim(s) 18, 20, 22 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see page 8, filed 9/13/2004, with respect to the objections to the specification have been fully considered and are persuasive. The objections to the specification have been withdrawn.
2. Applicant's arguments, see page 8, filed 9/13/2004, with respect to the objection to claim 1 have been fully considered and are persuasive. The objection to claim 1 has been withdrawn. However, based on the amended claim language, claim 1 has been rejected under 35 U.S.C. 112, second paragraph, for lacking antecedent basis as it is unclear which distributed processor is being referred to. This rejection can be overcome by simply changing the wording to something like "one of the plurality of distributed processors".
3. Applicant's arguments filed 9/13/2004 have been fully considered but they are not persuasive. Applicant has argued that Dravida fails to disclose the limitation that calls are routed away from the congestion. Examiner respectfully disagrees with this argument. As stated by the applicant, Dravida discloses using a primary route when no congestion exists and using an alternate route when congestion exists. It is inherent that this change in routes must be away from the congestion as there would be no other reason to change the routing due to the change in congestion status. As further evidence, consider lines 42-45 of column 5 which indicates that the alternate paths are lightly loaded, clearly indicating that traffic on these paths is going away from the congestion. For the above reasons, the previous rejection is maintained below.
4. The indicated allowability of claims **1-2 and 12** is withdrawn in view of the newly discovered reference to Barberis. Rejections based on the newly cited reference follow. Further,

claims 3-11 and 13-16 are rejected based on the rejection under 35 U.S.C. 112, second paragraph, but contain allowable subject matter as indicated below.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 1 recites the limitation "the distributed processor" in line 5. There is insufficient antecedent basis for this limitation in the claim. This rejection can be overcome by changing the wording of the claim limitation to something like "one of the plurality of distributed processors". Claims 2-16 are rejected as being dependent on indefinite claim 1.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,320,500 to Barberis, et al.

Regarding claim 1, Barberis discloses the limitation of a multiprocessor control block in Figure 1B. The plurality of distributed processors are included within the delay estimator ST of Figure 1B. The distributed processors are more clearly shown in Figure 2 which shows the $n + 1$

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processing units (arithmetic units, summing registers, etc.) corresponding to each of the buffers of Figure 1B. The resource routing processor is the combination of the processor EL and the updating unit AG of Figure 1B which is clearly coupled to the distributed processors (delay estimator ST). More specifically, the delay estimator maintains congestion status of the queuing points (buffers) as the incremental delays assigned to the respective buffers; this is described throughout, for example in lines 8-14 of column 2. As is well known in the art, a large buffer delay indicates congestion and thus discloses the congestion indication of the claimed invention. Regarding the specific details of the resource routing processor, the processor EL controls the routing functionality within the communication switch as described throughout Barberis; see lines 1-8 of column 2, for example. Further, the processor and the updating unit preferentially select uncongested routes for subsequent connection within the switch based on the congestion indications as indicated in lines 49-52 of column 3 and lines 43-49 of column 4. The path with the minimal delay time is determined in part by the incremental delays of the buffers and thus is determined in part due to the congestion indications as stated above.

Regarding claim 2, the resource routing processor performs resource allocation amongst the connections supported by the switch as discussed throughout, for example as indicated in lines 1-8 of column 2. This passage indicates that the processor controls the transfer of incoming packets to the transmit buffers and thus allocates resources for the packets traversing the switch.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,320,500 to Barberis et al in view of Applicant's admitted prior art.

Regarding claims 12, Barberis discloses the limitations of parent claim 2 as discussed in the rejection under 35 U.S.C. 102 (b) above. Barberis discloses the limitation that the congestion indications (queue lengths) of the buffer memories in Figure 1B are used in the routing decision by the resource routing processor as described in the rejection above as well.

Barberis does not expressly disclose the limitation that the input and output buffers are implemented on separate line cards. Applicant's admitted prior art (Figure 1) clearly indicates the use of a plurality of line cards in a communications switch. Barberis and Applicant's admitted prior art are from the same field of endeavor of congestion control in a communications node. At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Barberis to implement the input and output buffers of Figure 1B on separate line cards. The motivation for doing so would have been to allow the nodes of Barberis to have more capacity (N input/output cards can support more traffic than if all the buffers were implemented

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on a single card) and allow the system to be upgraded (to higher capacity) more easily.

Therefore, it would have been obvious to combine Applicant's admitted prior art with Barberis for the purposes of greater capacity and easier upgradability to obtain the invention as specified in claim 12.

13. Claims **17, 19, and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,253,248 to Dravida et al in view of Applicant's admitted prior art.

Regarding claims **17 and 19**, Dravida discloses a communication switch in the node of Figure 27. The nodal processor 2730 discloses the routing control block (claim 17) and central control block (claim 19). The nodal processor performs routing functionality through the maintenance of the routing tables (2750 and 2760) and call processing through the update of the maintenance of topology information (2801 in Figure 28) and determining alternate paths for calls as the topology changes (lines 65-67 of column 11). The input buffers (2715-2717) and output buffers (2725-2727) of Figure 27 disclose the functionality of the plurality of line cards which are operably coupled with the routing/central control block. As is shown in Figure 27 and the flow chart of Figure 26, then congestion is detected on a transmit queue (output buffer), a congestion indication (via the congestion monitor) is provided to the routing control block. The switch between the congestion monitor 2740 and the routing tables indicates how Dravida routes calls away from the congestion based on this indication.

Dravida does not expressly disclose the limitation that the input and output buffers are line cards. Applicant's admitted prior art (Figure 1) clearly indicates the use of a plurality of line cards in a communications switch. Dravida and Applicant's admitted prior art are from the same field of endeavor of congestion control in a communications node. At the time of the invention it

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would have been obvious to a person of ordinary skill in the art to modify Dravida to implement the input and output buffers of Figure 27 on separate line cards. The motivation for doing so would have been to allow the nodes of Dravida to have more capacity (N input/output cards can support more traffic than if all the buffers were implemented on a single card) and allow the system to be upgraded (to higher capacity) more easily. Therefore, it would have been obvious to combine Applicant's admitted prior art with Dravida for the purposes of greater capacity and easier upgradability to obtain the invention as specified in claims 17 and 19.

Regarding claim 21, with the parent claim 19 addressed above, Dravida discloses the limitation of the subsequent routing operations including maintaining the status of a plurality of transmit queues (congestion monitor 2740) wherein the status is used to determine a non-congested compatible transmit queues for the subsequent routing operations (as indicated in lines 42-45 of column 5).

Allowable Subject Matter

14. Claims 18, 20, and 22-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. Claims 3-11, 13-16 would be allowable if rewritten to overcome the rejections under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert C. Scheibel whose telephone number is 571-272-3169. The examiner can normally be reached on Monday and Thursday from 6:30-5:00 Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RCS 1-17-05
Robert C. Scheibel
Examiner
Art Unit 2666

Seema S. Rao 1/18/05
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